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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/578,038	05/25/2000	Tomoyoshi Yabe	PM 270700	6470

7590

02/27/2003

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EXAMINER

KIBLER, VIRGINIA M

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 02/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/578,038

Applicant(s)

YABE, TOMOYOSHI

Examiner

Virginia M Kibler

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☒ Claim(s) 1, 4 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Objections

1. Claims 1, 4, and 10 are objected to because of the following informalities:
“demensionally” should be changed to “dimensionally” in claim 1, line 2; “surfece” should be changed to “surface” in claim 4, line 20; and “goning” should be changed to “going” in claim 10, line 21. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 7 recites the limitation "the prescribed manufacturing process" in lines 10 and 11. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2623

5. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fant et al. (4,519,041).

Regarding claim 1, Fant et al. ("Fant") discloses a surface inspection system including a line sensor for one-dimensionally imaging a board 34 (Col. 4, lines 46-49), a velocity-measuring means 36 for measuring a moving velocity of the board, a sampling control means for controlling the sampling of the line sensor on the basis of the moving velocity of the board to be measured by the velocity measuring means (Col. 4, lines 49-53), and an image-composing memory for composing an output of the line sensor to obtain a two-dimensional image data (Col. 4, lines 63-68 and Col. 5, lines 1-2). Fant does not recognize using the surface inspection system for elongated work boards. However, in light of Fant's disclosure, it would have been obvious to change the inspection of hot metal slabs to inspection of elongated work boards.

Regarding claim 3, Fant discloses a controlling means to correct the image data on the basis of the position or "degree of a slant" of the board (Col. 4, lines 49-53).

6. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fant et al. (4,519,041) as applied to claim 1 above, and further in view of Bonewitz et al. (5,917,602).

Regarding claim 2, Fant does not recognize the velocity-measuring means measuring the rotational velocity of a transferring roller for transferring the board. However, Bonewitz et al. ("Bonewitz") teaches that it is known to measure the rotational velocity of a transferring roller 202 (Col. 9, lines 20-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the velocity-measuring means disclosed by Fant to include measuring the rotational velocity of a transferring roller, as taught by Bonewitz, in order to provide another means of measuring the velocity of the board.

Art Unit: 2623

7. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fant et al. (4,519,041) as applied to claim 1 above, and further in view of Oohashi (04046749).

Regarding claim 4, Fant does not disclose including a transmitting means for assigning a transmission channel to every board, assembling the image data into a transmission packet, and transmitting the packet. However, Oohashi teaches that it is known to include a transmitting means (Abstract, lines 1-9). Oohashi further teaches that it is known to assemble the image data into a transmission packet and transmit the transmission packet (Abstract, lines 12-18). Oohashi shows in 3 assigning a transmission channel 2 to separate objects 1, therefore, in light of Oohashi's transmitting means it would have been obvious to assign a channel to every work board in Fant for faster processing. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the inspection system disclosed by Fant to include a transmitting means, as taught by Oohashi, in order to automatically process and shorten the period of time required for analysis.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fant et al. (4,519,041) as applied to claim 1 above, and further in view of Mori et al. (09011090) in further view of Suzuki et al. (09160982).

Regarding claim 5, Fant does not disclose a detecting means for detecting the board on a work line, a time-measuring means for measuring a detected time when the board is detected by the detecting means, and an identifying means for identifying the board by means of the detected time. However, Mori et al. ("Mori") teaches that it is known to include a detecting means 5 for detecting the board on a work line (Abstract). Suzuki et al. ("Suzuki") teaches that it is known to include a time-measuring means as well as an identifying means for identifying the board by the

Art Unit: 2623

time (Abstract, lines 13-23). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the inspection system disclosed by Fant to include a detecting means, as taught by Mori, as well as a time-measuring means and an identifying means, as taught by Suzuki, in order to provide process control and quality control.

9. Claims 6, 7, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. (09011090) in view of Suzuki et al. (09160982).

Regarding claim 6, Mori et al. ("Mori") discloses including a detecting means 5 for detecting the board on a work line (Abstract). Mori does not recognize including a time-measuring means for measuring a detected time when the work product is detected by the detecting means and an identifying means for identifying the work product by way of the detected time measured. However, Suzuki et al. ("Suzuki") teaches that it is known to include a time-measuring means as well as an identifying means for identifying the board by the time (Abstract, lines 13-23). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the detecting means disclosed by Mori to include a time-measuring means and an identifying means, as taught by Suzuki, in order to provide process control and quality control.

Regarding claim 7, Mori discloses a detecting means that detects the work product going-into and the going-out from a prescribed manufacturing process (Abstract, lines 12-17).

Regarding claim 9, Suzuki discloses an identifying means that identifies the work product by a manufacturing process and the time it passed through the process (Abstract, lines 13-23).

Art Unit: 2623

Regarding claim 10, Suzuki discloses an identifying means that identifies the image data of the work produce going out from a manufacturing process by the process and time it passed through the process (Abstract, lines 13-23).

10. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. (09011090) as applied to claim 6 above, and further in view of Suzuki et al. (09160982) in further view of Fant et al. (4,519,041).

Regarding claim 8, Mori and Suzuki do not explicitly state a detecting means that detects a leading and a trailing end portion of the work product to be transferred. However, Fant et al. ("Fant") teaches that it is known to include a detecting means 36 that detects the leading and trailing end portion of the work product as shown in Figure 2. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the detecting means disclosed by Mori and Suzuki to include detecting the leading and trailing portions of the work product, as taught by Fant, in order to provide position and velocity information of the product.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 6,081,613 to Ikurumi et al. for system for inspecting an appearance of a printed circuit board.

Art Unit: 2623

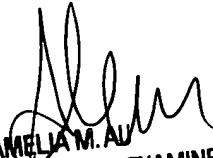
Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072. The examiner can normally be reached on Mon. - Thurs. 8:00 - 5:30 and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

VK
February 24, 2003


AMELIA M. AU
SUPERVISORY PATENT EXAMINER
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